CLAIMS

1. An alignment method for positioning objects to be bonded to each other by reading a positioning recognition mark provided on at least one object by movable recognition means, said alignment method comprising the steps of:

reading said recognition mark during movement of said recognition means before its complete stop; and

identifying an absolute position of said recognition mark by correcting a mark recognition position having been read by said recognition means, based on a position feedback signal of said recognition means sent during movement of said recognition means.

2. The alignment method according to claim 1, wherein a two-sight recognition means having sights in directions toward both objects is used as said movable recognition means, respective positioning recognition marks provided on both objects are simultaneously read synchronously as to respective sights during movement of said recognition means before its complete stop, and absolute positions of respective recognition marks are identified by correcting respective mark recognition positions having been read by said recognition means, based on position feedback signals of said recognition means sent during movement of said recognition means.

3. The alignment method according to claim 1, wherein recognition means for reading all of respective positioning recognition marks provided on both objects from lower side is used as said movable recognition means, respective recognition marks are read during movement of said recognition means before its complete stop, and absolute positions of respective recognition marks are identified by correcting respective mark recognition positions having been read by said recognition means, based on position

feedback signals of said recognition means sent during movement of said recognition means.

4. The alignment method according to claim 3, wherein a double lens camera is used for said movable recognition means.

5. The alignment method according to claim 4, wherein said double lens camera is incorporated integrally into a movement mechanism.

6. The alignment method according to claim 4, wherein said double lens camera is constructed by incorporating two cameras being separable into a movement mechanism.

7. The alignment method according to claim 3, wherein a positioning recognition mark provided on at least one object is read by transmitting a measurement wave through an object or/and a member for receiving the object.

8. The alignment method according to claim 1, wherein said reading is carried out by correcting in soft an aberration of a lens of said movable recognition means.

9. The alignment method according to claim 1, wherein, when recognition marks of both objects are provided at positions impossible to read simultaneously, a recognition mark provided on one object is moved together with the object to a position at which the recognition mark can be read simultaneously with a recognition mark provided on the other object, and after both recognition marks are simultaneously read synchronously, an absolute position of said moved recognition mark is identified by

correction in consideration of an amount of said movement.

10. The alignment method according to claim 9, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position prior to said movable recognition means.

11. The alignment method according to claim 9, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position simultaneously with said movable recognition means.

12. The alignment method according to claim 9, wherein, when said one object is moved to said position possible to be read simultaneously, an absolute position of said recognition mark of said one object is identified before complete stop of a table for moving said one object, based on a position feedback signal of said table.

13. The alignment method according to claim 1, wherein, when said movable recognition means reads said positioning recognition mark provided on said object, an exposure time is controlled by an electronic shutter.

14. The alignment method according to claim 13, wherein a stroboscopic emission is carried out synchronously with said exposure time due to said electronic shutter.

15. An alignment method for positioning objects to be bonded to each other by reading positioning recognition marks provided on both objects by a two-sight recognition means having sights in directions toward both objects, said alignment method comprising a step of reading both of said recognition marks simultaneously and

synchronously with each other.

16. The alignment method according to claim 15, wherein a two-sight recognition means having sights in directions toward both objects positioned at upper and lower sides is used as said two-sight recognition means.

17. The alignment method according to claim 16, wherein a double lens camera positioned at a lower side of both objects is used for said two-sight recognition means.

18. The alignment method according to claim 17, wherein said double lens camera is incorporated integrally into a movement mechanism.

19. The alignment method according to claim 17, wherein said double lens camera is constructed by incorporating two cameras being separable into a movement mechanism.

20. The alignment method according to claim 15, wherein, when recognition marks of both objects are provided at positions impossible to read simultaneously, a recognition mark provided on one object is moved together with the object to a position at which the recognition mark can be read simultaneously with a recognition mark provided on the other object, and after both recognition marks are simultaneously read synchronously, an absolute position of said moved recognition mark is identified by correction in consideration of an amount of said movement.

21. The alignment method according to claim 20, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to

a recognition position prior to said recognition means.

22. The alignment method according to claim 20, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position simultaneously with said recognition means.

23. The alignment method according to claim 20, wherein, when said one object is moved to said position possible to be read simultaneously, an absolute position of said recognition mark of said one object is identified before complete stop of a table for moving said one object, based on a position feedback signal of said table.

24. The alignment method according to claim 23, wherein, when said recognition means reads each of said positioning recognition marks provided on said objects, an exposure time is controlled by an electronic shutter.

25. The alignment method according to claim 24, wherein a stroboscopic emission is carried out synchronously with said exposure time due to said electronic shutter.

26. A mounting method for mounting one object onto the other object to be bonded to each other after positioning both objects to each other by using an alignment method, said alignment method positioning both objects to each other by reading a positioning recognition mark provided on at least one object by movable recognition means, said alignment method comprising the steps of:

reading said recognition mark during movement of said recognition means before its complete stop; and

identifying an absolute position of said recognition mark by correcting a mark

recognition position having been read by said recognition means, based on a position feedback signal of said recognition means sent during movement of said recognition means.

27. The mounting method according to claim 26, wherein a two-sight recognition means having sights in directions toward both objects is used as said movable recognition means, respective positioning recognition marks provided on both objects are simultaneously read synchronously as to respective sights during movement of said recognition means before its complete stop, and absolute positions of respective recognition marks are identified by correcting respective mark recognition positions having been read by said recognition means, based on position feedback signals of said recognition means sent during movement of said recognition means.

28. The mounting method according to claim 26, wherein recognition means for reading all of respective positioning recognition marks provided on both objects from lower side is used as said movable recognition means, respective recognition marks are read during movement of said recognition means before its complete stop, and absolute positions of respective recognition marks are identified by correcting respective mark recognition positions having been read by said recognition means, based on position feedback signals of said recognition means sent during movement of said recognition means.

29. The mounting method according to claim 28, wherein a double lens camera is used for said movable recognition means.

30. The mounting method according to claim 29, wherein said double lens camera is

incorporated integrally into a movement mechanism.

31. The mounting method according to claim 29, wherein said double lens camera is constructed by incorporating two cameras being separable into a movement mechanism.

32. The mounting method according to claim 28, wherein a positioning recognition mark provided on at least one object is read by transmitting a measurement wave through an object or/and a member for receiving the object.

33. The mounting method according to claim 26, wherein said reading is carried out by correcting in soft an aberration of a lens of said movable recognition means.

34. The mounting method according to claim 26, wherein, when recognition marks of both objects are provided at positions impossible to read simultaneously, a recognition mark provided on one object is moved together with the object to a position at which the recognition mark can be read simultaneously with a recognition mark provided on the other object, and after both recognition marks are simultaneously read synchronously, an absolute position of said moved recognition mark is identified by correction in consideration of an amount of said movement.

35. The mounting method according to claim 34, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position prior to said movable recognition means.

36. The mounting method according to claim 34, wherein, when said one object is

moved to said position possible to be read simultaneously, said one object is reached to a recognition position simultaneously with said movable recognition means.

37. The mounting method according to claim 34, wherein, when said one object is moved to said position possible to be read simultaneously, an absolute position of said recognition mark of said one object is identified before complete stop of a table for moving said one object, based on a position feedback signal of said table.

38. The mounting method according to claim 26, wherein, when said movable recognition means reads said positioning recognition mark provided on said object, an exposure time is controlled by an electronic shutter.

39. The mounting method according to claim 38, wherein a stroboscopic emission is carried out synchronously with said exposure time due to said electronic shutter.

40. A mounting method for mounting one object onto the other object to be bonded to each other after positioning both objects to each other by using an alignment method, said alignment method positioning both objects to each other by reading positioning recognition marks provided on both objects by a two-sight recognition means having sights in directions toward both objects, said alignment method comprising a step of reading both of said recognition marks simultaneously and synchronously with each other.

41. The mounting method according to claim 40, wherein a two-sight recognition means having sights in directions toward both objects positioned at upper and lower sides is used as said two-sight recognition means.

42. The mounting method according to claim 40, wherein a double lens camera positioned at a lower side of both objects is used for said two-sight recognition means.

43. The mounting method according to claim 42, wherein said double lens camera is incorporated integrally into a movement mechanism.

44. The mounting method according to claim 42, wherein said double lens camera is constructed by incorporating two cameras being separable into a movement mechanism.

45. The mounting method according to claim 40, wherein, when recognition marks of both objects are provided at positions impossible to read simultaneously, a recognition mark provided on one object is moved together with the object to a position at which the recognition mark can be read simultaneously with a recognition mark provided on the other object, and after both recognition marks are simultaneously read synchronously, an absolute position of said moved recognition mark is identified by correction in consideration of an amount of said movement.

46. The mounting method according to claim 45, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position prior to said recognition means.

47. The mounting method according to claim 45, wherein, when said one object is moved to said position possible to be read simultaneously, said one object is reached to a recognition position simultaneously with said recognition means.

48. The mounting method according to claim 45, wherein, when said one object is moved to said position possible to be read simultaneously, an absolute position of said recognition mark of said one object is identified before complete stop of a table for moving said one object, based on a position feedback signal of said table.

49. The mounting method according to claim 48, wherein, when said recognition means reads each of said positioning recognition marks provided on said objects, an exposure time is controlled by an electronic shutter.

50. The mounting method according to claim 49, wherein a stroboscopic emission is carried out synchronously with said exposure time due to said electronic shutter.